

Controls

The system can be operated with the controls or the trackball module. The procedures in this operator's guide use the trackball module.

BRILL knob

Rotate: Adjusts the brilliance of the monitor.

Push: Selects a color palette.



GAIN knob

Rotate: Adjusts the sensitivity of the radar receiver.

A/C RAIN knob

Rotate: Suppresses rain clutter.

Push: Toggles between manual and automatic rain clutter adjustment.

A/C SEA knob

Rotate: Suppresses sea clutter.

Push: Toggles between manual and automatic sea clutter adjustment.

Status LED

The color and state of the LED change according to alert status.

OFF: Heater on CPU board is on.

Green, lighting: Normal operation status; no alerts generated.

Red, flashing rapidly: Alert not acknowledged nor rectified.

Red, flashing slowly: Alert not acknowledged, but rectified.

Red, lighting: SYSTEM FAIL, or acknowledged but not rectified alert.

Rotary encoder for VRM

Adjusts the active VRM.

VRM1, VRM2

Activates, deactivates respective VRM.

POWER key

Turns the system on or off. (This key may or may not control monitor on/off depending on monitor setting.)

USB port (under cover)

Connects a USB flash drive.

Trackball module

Operates like a PC mouse.

Rotary encoder for EBL

Adjusts the active EBL.

EBL1, EBL2

Activates, deactivates respective EBL.

ALARM ACK key

Acknowledges alerts; silences the audio alarm.

InstantAccess knob

Accesses functions on the InstantAccess bar™.

Rotate: Selects item.

Push: Confirms selection.

ESC key

Goes back one step in current InstantAccess bar™ operation.

Keyboard

A keyboard for entering alphanumeric data.

MFD key

Toggles operating modes.

UNDO key

Undoes the last operation, when creating a route or user chart.

RANGE key

Selects a chart scale.

VIEW/
HIDE

VIEW/HIDE key

Shows, hides EBLs, Instant Access bar™, Overlay/NAV Tools box, VRMs, Route Information box.

ACQ/
ACT

ACQ/ACT key

Activates selected sleeping AIS target.

TARGET
DATA

TARGET DATA key

Displays the detailed target data for selected TT, AIS target.

TARGET
CANCEL

TARGET CANCEL key

Sleeps selected activated AIS target.



Chart Display Layout

Status bar (see page 3)



InstantAccess bar™
(see page 4)



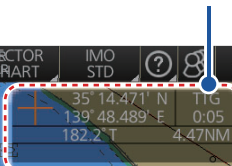
Upper section

Lower section

Chart scale, presentation mode box



Cursor position box



Sensor information box

HDG	121.8°	GYRO1
SPD	10.1kn	GPS1
	0.3kn	BT
COG	121.5°	GPS1
SOG	10.1kn	
POSN	35°18.956' N	
DGPS1	139°48.684' E	

Own ship functions box

Offset
WGS84
Ship off screen

Route information box

Route Information	
Route : route1	
Plan Speed :	20.0 kn
Plan Course :	206.5°
Course to Steer :	181.1°
XTD Limit :	185.0 m
XTD :	4388.4 m
TC :	****
To WPT :	2
DIST to WOP :	6.95 NM
Time to Go :	0: 8'21"
Turn RAD :	0.80 NM
ROT :	***°/min
Next WPT :	3
Next Course :	218.1°

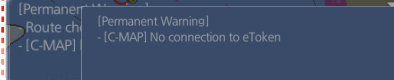
Overlay/NAV
Tools box

Overlay / NAV Tools	
TT / AIS	
FILT OFF	AIS
Vector	3min REL
CPA / TCPA	OFF
AIS CPA	OFF
Lost TGT	OFF
Past POSN	OFF REL
TT Source:	ANT 1
<input checked="" type="checkbox"/> SYNC. ANT	Datum: CORP

EBL1 box,
EBL2 box



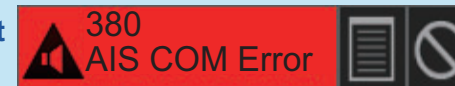
Permanent warning box



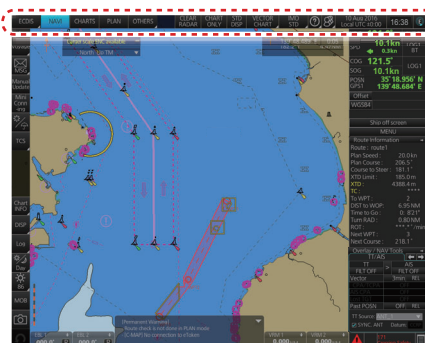
VRM1 box,
VRM2 box



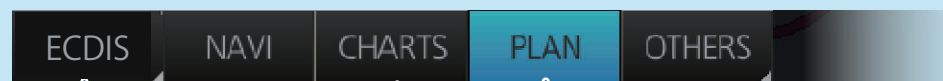
Alert
box



Status Bar (chart for radar mode)



How to open a drop-down list



OTHERS Sets system in silent mode (standby); plays back data (AMS* connection must be off).

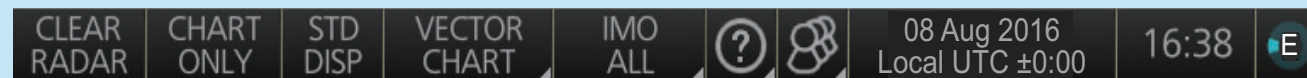
PLAN Selects the Voyage planning mode.

CHARTS Selects the Chart maintenance mode.

NAVI Selects the Voyage navigation mode.

Operating mode Selects the operating mode: ECDIS, RADAR, CONNING, or AMS*.

* Option



CLEAR RADAR

Hide radar overlay, AIS symbols and TT symbols, when any of the above-mentioned items are displayed. Greyed out otherwise.

Chart type selection

Selects which chart type to display (vector or raster), when both are available.

STD DISP

Restores the standard display for the chart object display mode.

User profiles, Settings menu

Manages user profiles; opens the Settings menu.

Working indicator

Rotates clockwise if the system is working properly.

Time

Displays the time.

Date

Displays the date; selects the time to use, local or UTC.

Displays the operator's manual, chart program no. and system information.

Chart database

Selects the chart database (IMO BASE, IMO STD, IMO ALL or CUSTOM) for displayed ENC.

CHART ONLY

Shows only the chart, when left button is pressed and held down.

Upper section (by chart operating mode)

Voyage navigation mode



Opens the Message dialog box to manage AIS Safety and NAVTEX messages.



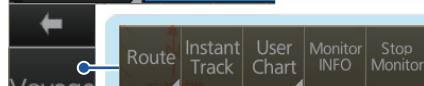
Manual Update:
Inserts chart update symbols manually.

Mini Conning:
Shows, hides the mini conning display.



Weather Overlay:
Shows, hides the weather overlay.

TCS State: Shows or hides the Track Control Status window.
GoAW, GoSEA: Activates respective autopilot steering mode.



Route:
- Select/Unselect monitored route.
- Switch monitored route to Voyage planning mode for editing.

Instant Track:
Creates temporary track to return to or deviate from monitored route.

User Chart:
Select/unselect monitored user chart.

Monitor INFO:
Show Monitor [Information] dialog box.

Stop Monitor:
Stop monitoring user chart and route.

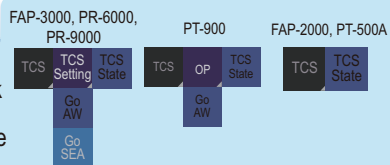


Chart maintenance mode



AUTO Load:

Starts automatic installation of the chart data (CD or DVD ROM).

Manage Charts:

Manages chart cells (grouping, deleting, etc.).

Cell Status:

Shows the chart catalog to get info about charts installed in the system.

License:

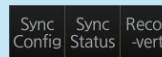
Manages chart licenses.

Public Key:

Manages public keys.

Sync Config:

Selects units to synchronize.



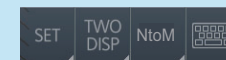
Sync Status:

Checks synchronization status.

Reconvert:

Reconverts SENC data.

Lower section



SET:

Shows or hides chart features; sets chart alerts.

TWO DISP:

Splits the screen in two, horizontally or vertically.

NtoM:

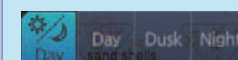
Displays Notice to Mariners info.



Shows or hides software keyboard.



Selects a color palette.



MOB:

Enters a MOB mark.

Takes a screenshot.

Restores previous condition in route and user chart creation.



Chart Legend:

Displays chart info when own ship is at center of screen.

Viewing Dates:

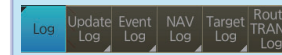
Shows "display date" dialog box.

Chart 1:

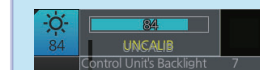
Provides overview of chart symbols.

Log:

Records user/position events to the event log; accesses various logs.



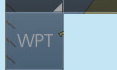
Adjusts brilliance of monitor and backlighting for control unit.



Voyage planning mode

Report:

See reports on waypoints and voyage planning related routes and user charts.



Route: Creates a route (see page 5).

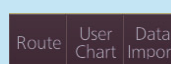
User Chart: Creates a user chart (see page 7).

Guide Box:

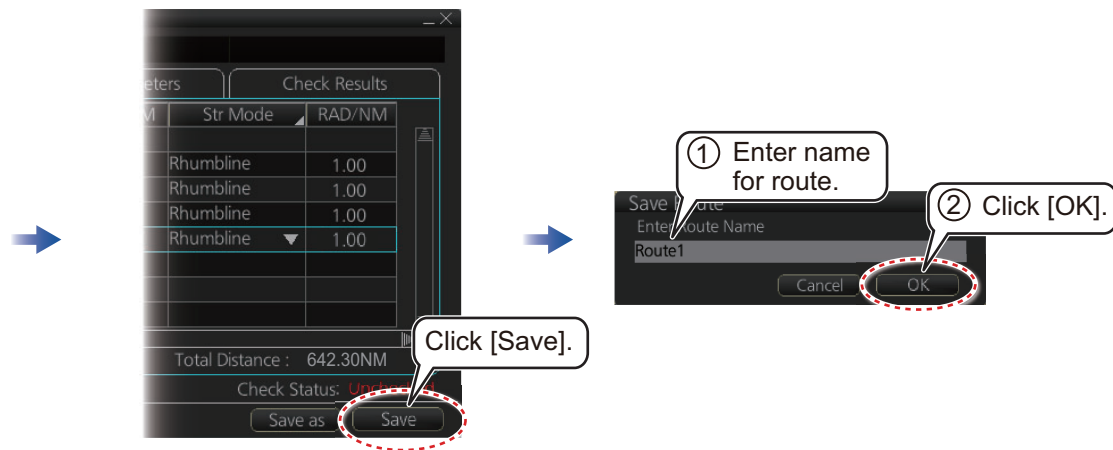
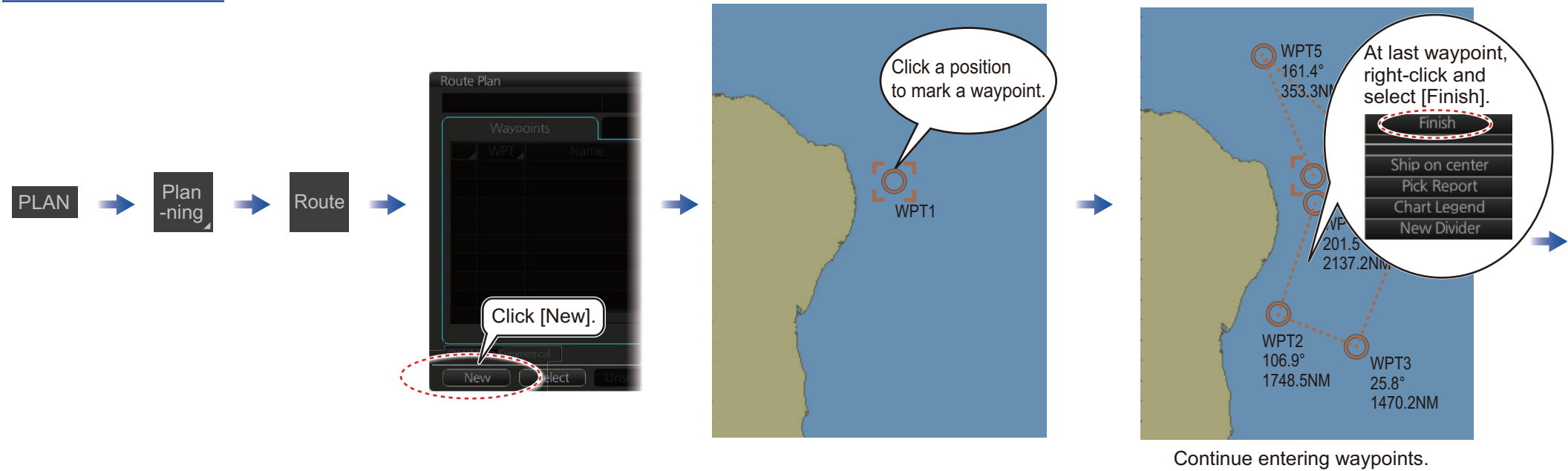
Provides range and bearing information between the last waypoint and the cursor position when creating a route.

Manage Data:

Deletes, imports routes and user charts.

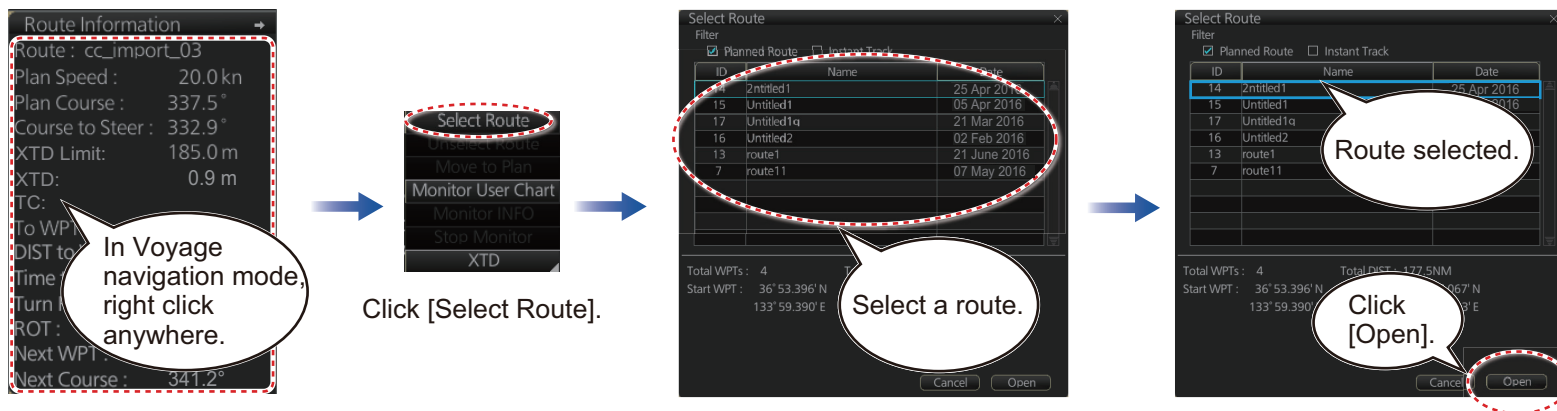


How to create a route



Routes (con't.)

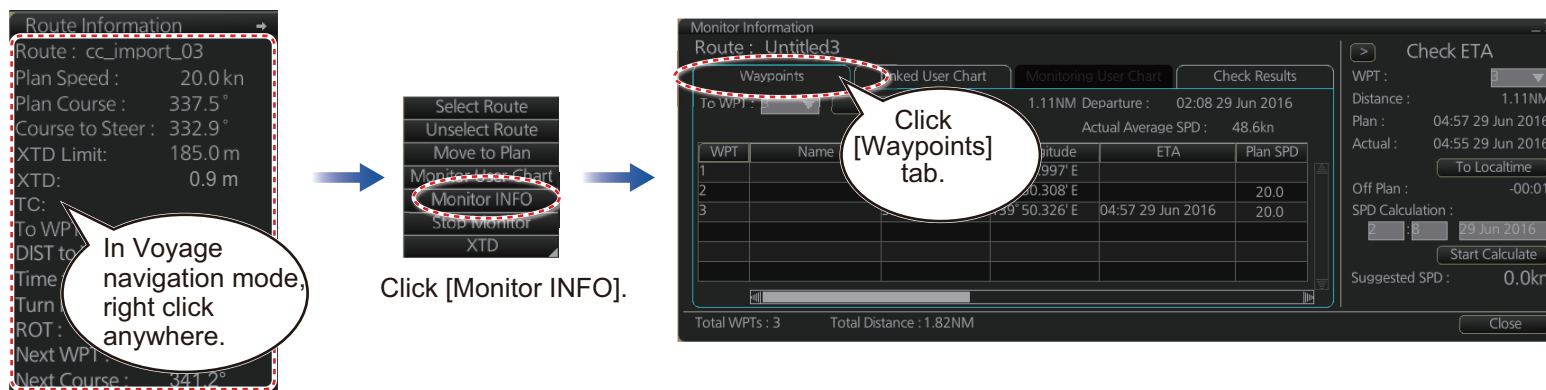
How to select a route to monitor



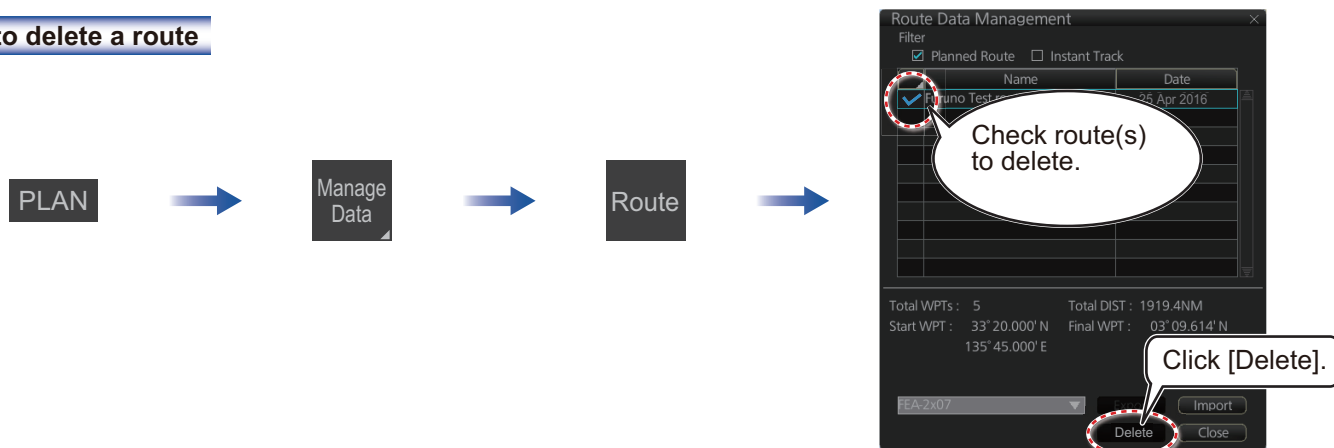
To stop monitoring a route:



How to view route waypoint information

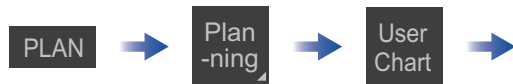


How to delete a route



User Charts

How to create a user chart

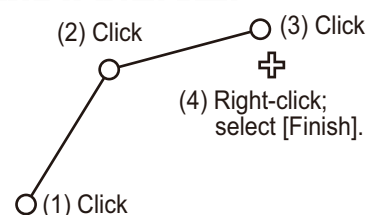


Click object to draw.

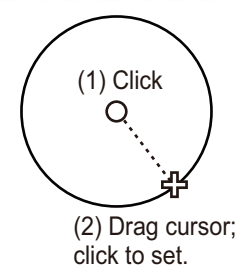
Tidal: - Current - Predicted			Area
Line: - Coast - Route - Nav - Depth			Circle
Clearing line: - NMT - NLT			Label: - Label - Point



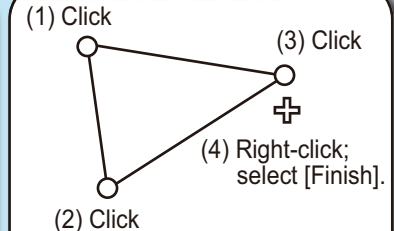
How to create a line



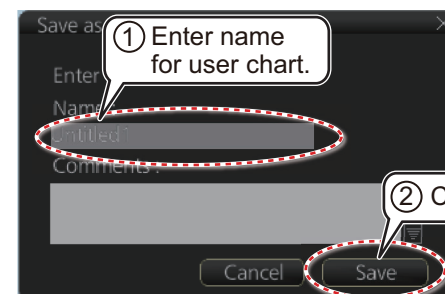
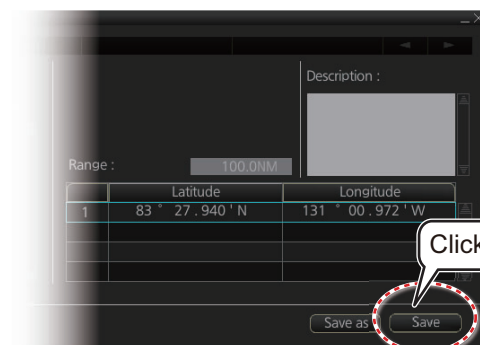
How to create a circle



How to create an area

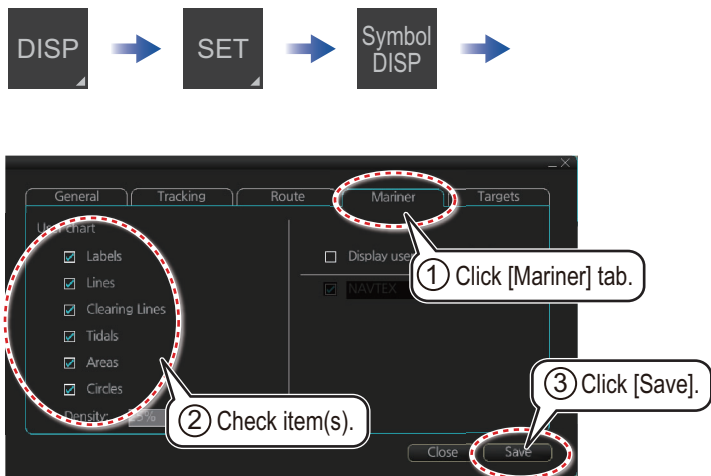


Example objects

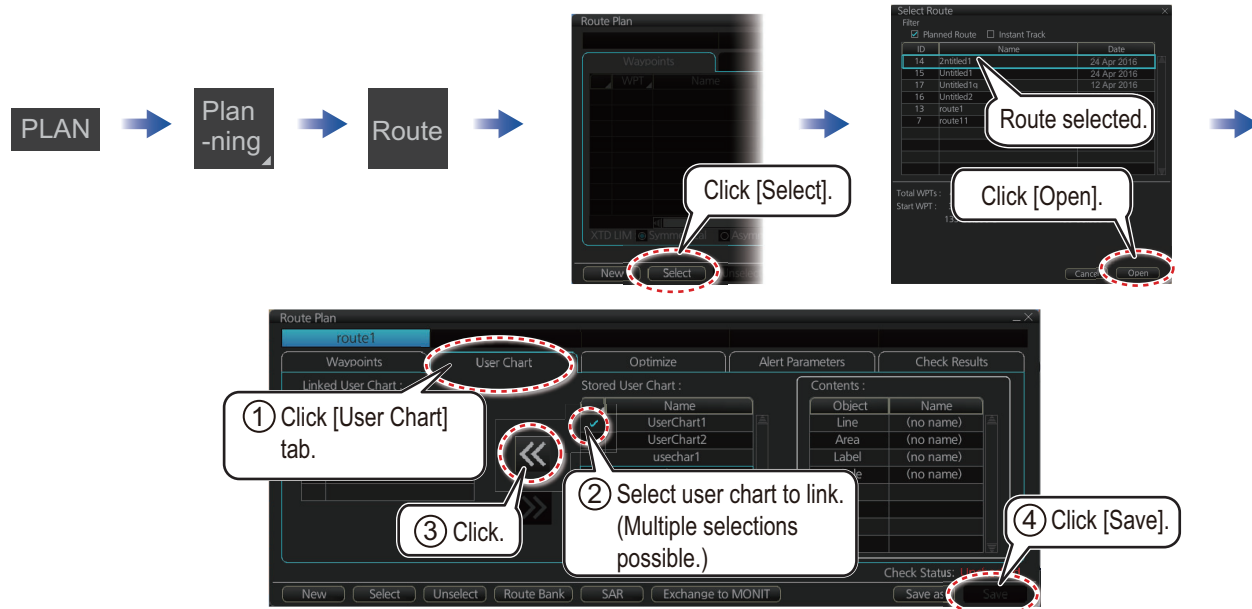


User Charts (con't)

How to select objects to display in user chart

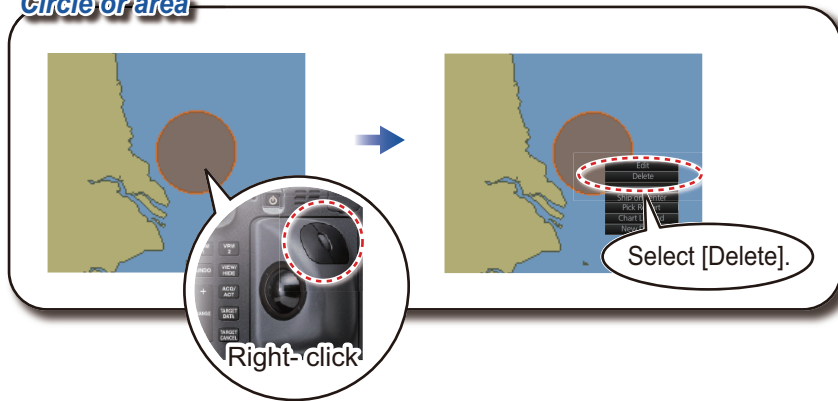


How to link a user chart to a route

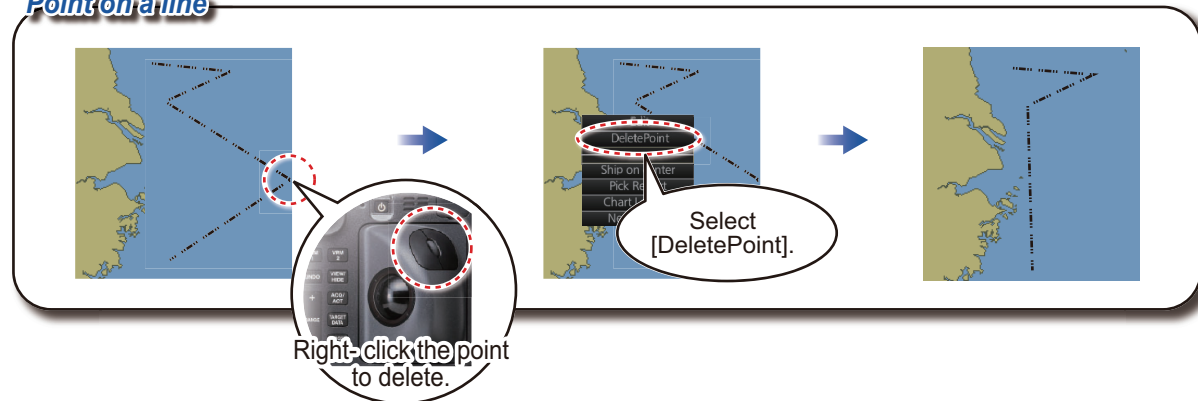


How to delete objects from a user chart

Circle or area



Point on a line



How to delete user charts

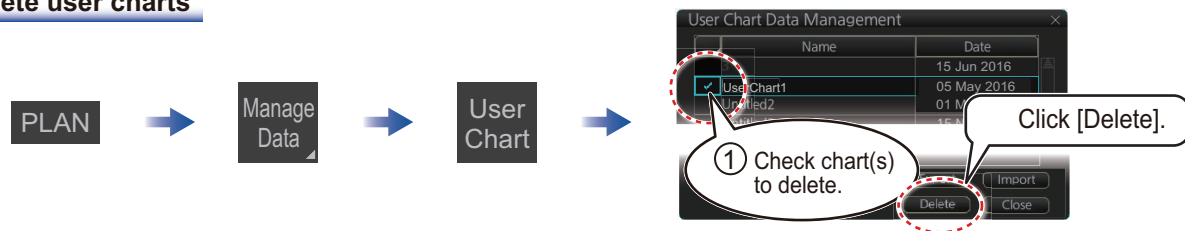


Chart Operations

How to control visibility of chart objects

DISP

SET

Chart DISP

Symbol DISP

Basic Setting
Control basic chart settings

Control chart objects

Control navigational features

Basic Setting

Light Popup:

Attributes Display:

TM Reset:

General Standard Other Text NtoM

Symbols:

Boundaries:

☐ Four Shades

☐ Full Light Lines

☐ Scale MIN

☐ Shallow Pattern

☐ Shallow Water Dangers

☐ Unknown

☐ Accuracy

☐ Highlight Date Dependent

☐ Highlight INFO

☐ Highlight Document

☐ Contour Labels

☐ LAT/LON Grid

General Standard Other Text NtoM

☐ Important Text (Clearances, Bearings, Routes, Radio Channels)

☐ Other Text

☐ Names

☐ Light Description

☐ All Other

☐ Nature of Seabed

☐ Magnetic Variation and Sweep

☐ Depth

☐ Height of Islet or Land Feature

☐ NtoM

☐ Others

General Tracking Route Mariner Targets

Ship Outlines:

AIS Outlines:

True outlines shown if > limit

Own Ship Limit = 3 mm

AIS Limit = 3 mm

Velocity Vectors

Ship Vectors:

Target Vectors:

Style:

☐ Time Increments

☐ Path Predictor

☐ Radar Antenna

General Tracking Route Mariner Targets

User chart

☒ Labels

☒ Lines

☒ Clearing Lines

☒ Tidal

☒ Areas

☒ Circles

Density:

☐ Display user chart symbol name

General Standard Other Text NtoM

☐ Drying Line

☐ Buoy, Beacons, Aids to Navigation

☐ Buoy, Beacons, Structures

☐ Buoy, Beacons

☐ Radar

☐ Fog Signals

☐ Others

☐ Lights

☐ Boundaries and Limits

☐ Prohibited and Restricted Areas

☐ Chart Scale Boundaries

☐ Cautionary Notes

☐ Ships' Routing System and Ferry Routes

☐ Archipelagic Sea Lanes

☐ Services

☐ Miscellaneous

General Standard Other Text NtoM

AIO

☒ Temporary Notice

☒ Preliminary Notice

☒ No Information

C-MAP

☒ Temporary Notice

☒ Preliminary Notice

☒ No Information

General Tracking Route Mariner Targets

Own Ship Past Tracks

☐ CCRP

☐ Primary

☐ Secondary

☐ Pivot

Style:

Length: min

Labels: min

Events

☐ User Events

☐ Auto Events

☐ Position Events

Show:

General Tracking Route Mariner Targets

Color:

AtON Symbol Color:

TT Size:

AIS ROT TAG Limit: "/min

TT Label:

AIS Label:

TT Pop-up INFO:

AIS Pop-up INFO:

Past Position

TT/AIS Points:

Style:

General Standard Other Text NtoM

☐ Spot Soundings

☐ Submarine Cables and Pipelines

☐ All Isolated Dangers

☐ Magnetic Variation

☐ Depth Contours

☐ Seabed

☐ Tidal

☐ Natural and Man-made Features

☐ Port Features

☐ Miscellaneous

General Standard Other Text NtoM

General Tracking Route Mariner Targets

Monitored Route

☐ XTD Limit

☐ Safety Margin

☐ Leg Marks

☒ True ☒ Relative

☐ Wheel Over Line

Planned Route

☐ XTD Limit

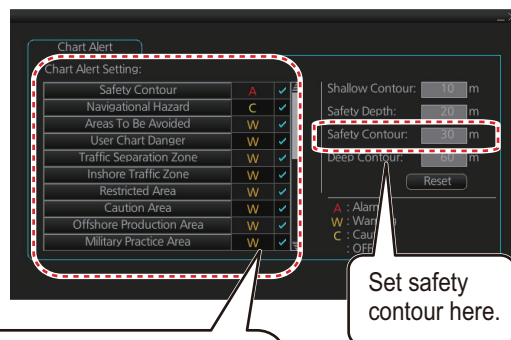
☐ Safety Margin

☐ Leg Marks

☒ True ☒ Relative

Chart Operations

How to set safety contours and chart alerts



Click to select chart alert type:

A (Alarm): Audio+visual indications

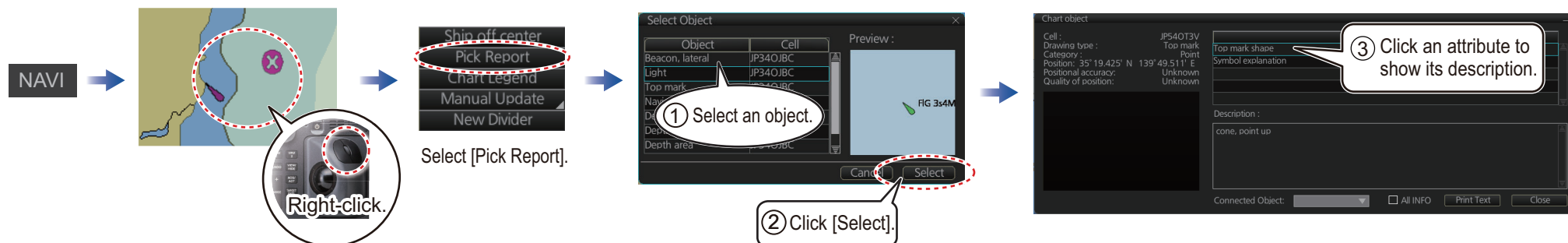
W (Warning): Visual indication

C (Caution): No indication

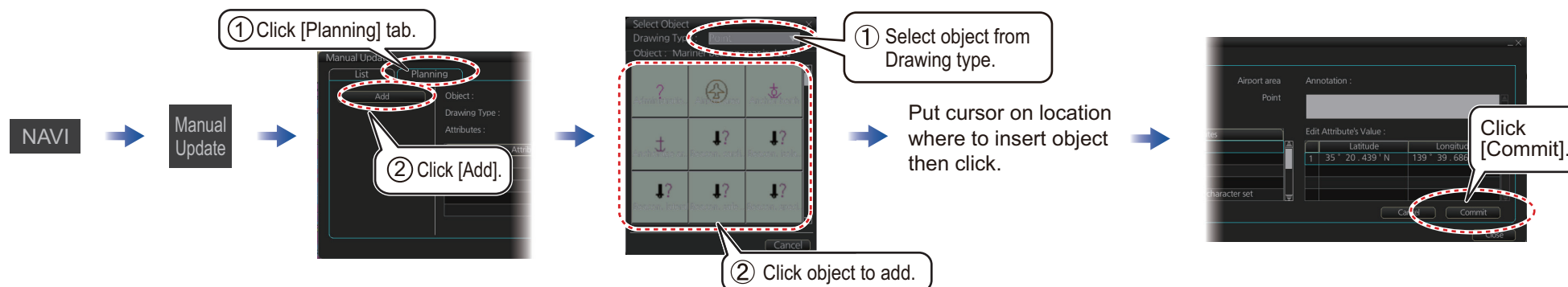
To turn off display of a chart object in route monitoring, remove check mark from alert (alarm, warning, caution).

Click icon to switch between **C** and **W** vice versa.

How to find chart object information (ENC chart)



How to manually insert a "new" chart object



TT/AIS Operations

How to find target info

Click a target to show its information.

TT Info (1/2)

TT No. TT 06

Scroll buttons

Close

Bearing BRG 102.9° T

Range RNG 7.800 NM

Course over ground COG 270.0° T

Speed over ground SOG 10.0 kn

CPA CPA 0.100 NM

TCPA TCPA 00:06

Bow crossing range BCR **.* NM

Bow crossing time BCT **.*

TT symbols (main)

Symbol (Color)	Name
(Green)	Past position point
(Green)	Target under acquisition
(Green)	Acquired target

AIS Info (1/2)

MMSI MMSI 000001003

Vessel name VESSEL B

Expand

Click to switch level of detail

Scroll buttons

Close

Bearing BRG 141.5° T

Range RNG 74.57 NM

Course over ground COG 90.0° T

Speed over ground SOG 14.0 kn

CPA CPA 28.58 NM

TCPA TCPA -79:29

Bow crossing range BCR 104.0 NM

Bow crossing time BCT >99:59

Position 34° 17.923' N 140° 39.636' E

HDG 90.0° T

ROT +0.0° /min

NAV status: Underway using engine

Heading

Rate of turn

Navigation status

AIS symbols (main)

Symbol (Color)	Name
(Green)	Past position point
(Green)	Sleeping AIS target
(Green, thick line)	Activated AIS target

How to set up TT and AIS on the TT/AIS page in Overlay/NAV Tools box

Shows or hides TT symbols.

Sets past position point interval (time).

1min True-G

Setting cannot be changed from this equipment.

Set association method.

Shows or hides AIS symbols.

Sets vector time (shared AIS/TT).

6min REL

Sets vector mode (shared AIS/TT).

Vector (ex. TT)

No use.

Selected TT data source.

TT Source: ANT_1

[CCRP/ANT] button (available only when an antenna not compliant with IEC 62388 Ed.2 is connected.)

Selects the reference position (CCRP or ANT) for use in the TTM sentence.

Checked when the antenna that displays radar echoes automatically feeds TT data.

TT Source: SYNC. ANT Datum: CCRP

Note: For systems which have the optional RADAR function, this section of the TT/AIS page appears blank.

TT/AIS Operations (con't)

Open the chart menu, select TT/AIS Setting and then Setting. The below menus can also be displayed by clicking the radio button on the pop-up menu that appears when an item other than TT/AIS is selected on the Overlay/NAV Tools box.

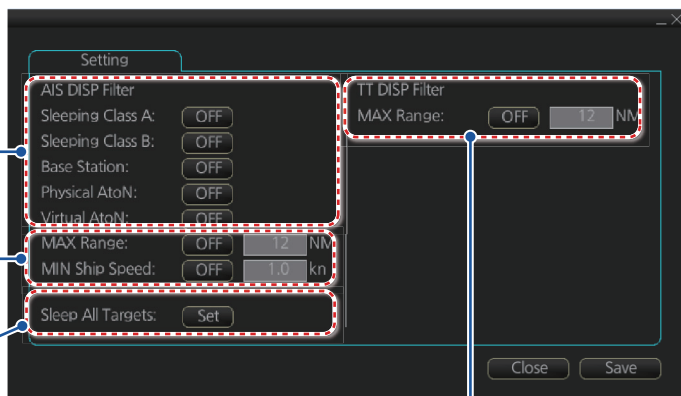


How to filter TT and AIS displays, sleep all targets

Limit AIS display by AIS category.

Filters AIS targets by range, speed.

Sleeps all activated AIS targets.



Set range (from own ship) to hide vessels beyond the range set

Radar Overlay

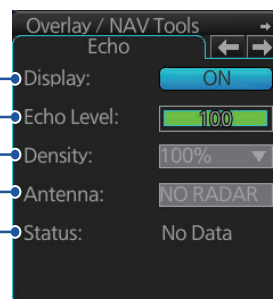
Activates, deactivates the radar overlay.

Adjusts the picture gain.

Sets the degree of transparency for the overlay.

Selects the antenna to feed the radar echo data.

Status of the radar echo data, "OK" or "No Data".



Alert Icons and Their Meanings

No.	Icon	Alert state	Description
Emergency, Alarm alert			
1		Active - unacknowledged alarm	Flashing red triangle. Loudspeaker symbol at center. Presented together with alert text.
2		Active - silenced alarm	Flashing red triangle. Loudspeaker symbol at center with diagonal line through symbol. Presented together with alert text.
3		Active - acknowledged alarm	Steadily displayed red triangle. Exclamation mark at center. Presented together with alert text.
4		Active - responsibility transferred alarm	Steadily displayed red triangle. Right arrow at center. Presented together with alert text.
5		Rectified - unacknowledged alarm	Flashing red triangle. Tick mark at center. Presented together with alert text.
Warning alert			
6		Active - unacknowledged warning	Flashing yellow-orange circle. Loudspeaker symbol at center. Presented together with alert text.
7		Active - silenced warning	Flashing yellow-orange circle. Loudspeaker symbol at center with diagonal line through symbol. Presented together with alert text.
8		Active - acknowledged warning	Steadily displayed yellow-orange circle. Exclamation mark at center. Presented together with alert text.
9		Active - responsibility transferred warning	Steadily displayed yellow-orange circle. Right arrow at center. Presented together with alert text.
10		Rectified - unacknowledged warning	Flashing yellow-orange circle. Tick mark at center. Presented together with alert text.
Caution alert			
11		Caution	Steadily displayed yellow square. Exclamation mark at center. Presented together with alert text.
Other icons			
12		Aggregation	Plus sign. Presented together with icon numbers 1 to 11.
13		Acknowledged not allowed for alarm	Red triangle. Cross in center of circle. Presented together with icon numbers 1, 2 and 5.
14		warning	Yellow-orange circle. Cross in center of circle. Presented together with icon numbers 6, 7 and 10.